

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today  
(1) was not written for publication in a law journal and  
(2) is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte BRENT J. BERTUS,  
HAROLD W. MARK, JOHN S. ROBERTS,  
and ARNOLD M. SCHAFFER

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Appeal No. 1999-2548  
Application 08/648,236

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HEARD: March 23, 2000

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Before GARRIS, WARREN, and WALTZ, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

This is a decision on an appeal which involves claims 1 through 4, 6, 7, 9 through 11, 13 through 15, 21 through 27, 35 through 39, 41 through 45 and 50 through 55 which are all of the claims pending in the application.

The subject matter on appeal relates to a process which includes the step of contacting a regenerated catalyst with a reducing gas under conditions suitable for countering effects of contaminating metals thereon. This appealed subject matter is adequately illustrated by independent claims 1 and 35 which read as follows:

1. In a process for the catalytic cracking of a hydrocarbon feed wherein said feed is contacted with a crystalline zeolite aluminosilicate cracking catalyst containing antimony and at least one contaminating metal selected from the group consisting of nickel, vanadium, and iron under cracking conditions and at least a portion of said cracking catalyst is periodically regenerated by contact with a combustion supporting gas under regeneration conditions and at least a portion of the regenerated catalyst is employed in the catalytic cracking of hydrocarbon feed, the improvement consisting essentially of contacting at least a portion of said regenerated catalyst with a reducing gas under conditions suitable for countering effects of contaminating metals thereon to produce a passivated catalyst and employing at least a portion of said [reduced] passivated catalyst in cracking said hydrocarbon feed.

35. A process for the cracking of a hydrocarbon feedstock comprising contacting said feedstock under cracking conditions in a cracking zone with a cracking catalyst prepared by (1) starting with a contaminated cracking catalyst comprising crystalline zeolite alumino-silicate containing at least one metal selected from the group consisting of antimony, tin, bismuth, and manganese wherein said contaminants comprise carbon and at least one metal contaminant selected from the group consisting of nickel, vanadium, and iron, (2) exposing said contaminated cracking catalyst in an oxidation step to a combustion-supporting gas under conditions sufficient to result in combustion of carbon contaminant, and (3) then exposing the resulting catalyst in a reduction step to a

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reducing gas under conditions suitable for countering adverse effects of said contaminating metals.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Corneil et al. (Corneil)	2,575,258	Nov. 13, 1951
Readal et al. (Readal)	3,977,963	Aug. 31, 1976
McKay	4,025,458	May 24, 1977
McKay	4,141,858	Feb. 27, 1979
Bertus et al. (Bertus)	4,167,471	Sep. 11, 1979
Suggitt et al. (Suggitt)	4,013,546	Mar. 22, 1977
Perue et al. (Japanese '406)	142406/78	Dec. 12, 1978

Cimbalo et al. (Cimbalo), "Deposited metals poison FCC catalyst," Oil & Gas Journal, Vol. 70, No. 20, pp. 112-122, 1979

Claims 13 through 15, 21 through 27, 35 through 39, 41 through 45 and 50 through 55 are rejected under the first paragraph of 35 U.S.C. § 112 for being based upon a disclosure which does not contain a written description of the now claimed subject matter.

Claims 1 through 4, 6, 7, 9, 10, 13 through 15, 21 through 27, 35 through 39, 41 through 45, 50 through 52, 54

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and 55 are rejected under 35 U.S.C. § 103 as being unpatentable over Suggitt in view of Bertus, Readal and Japanese '406, and claims 11 and 53 are correspondingly rejected over these references and further in view of Corneil.

All of the claims on appeal also stand rejected under 35 U.S.C. § 103 as being unpatentable over Corneil in view of Suggitt, Cimbalo, Bertus, Readal and Japanese '406.

Finally, all appealed claims are provisionally rejected under the doctrine of obviousness-type double patenting as being unpatentable over the claims of copending application Serial No. 08/648,520 in view of Readal, McKay '858 or McKay '458.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by the appellants and by the examiner concerning the above noted rejections.

#### OPINION

We will sustain the examiner's section 103 rejection of claims 35 through 39 and 41 through 45 which relies upon Suggitt as a primary reference as well as the provisional rejection of all appealed claims based upon obviousness-type

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double patenting. However, we cannot sustain any of the other rejections advanced by the examiner on this appeal. Our reasons are set forth below.

The examiner's provisional rejection of all appealed claims under the doctrine of obviousness-type double patenting has not been contested by the appellants on this appeal; see the last paragraph on page 26 of the brief. Under these circumstances, we will summarily sustain this provisional rejection without further comment.

Concerning the examiner's "written description" rejection under the first paragraph of section 112, the test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language. In re Kaslow, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983). With this test in mind, it is clear that the written description requirement is not offended by the examiner's point that the original disclosure does not contain literal

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support for the claimed subject matter directed to bismuth and manganese as passivating agents. On the other hand, we find persuasive merit in the appellants' argument that their original disclosure including the first full paragraph in column 3 of their patent would reasonably convey to an artisan that they had possession on their application filing date of passivating agents generally including the here claimed bismuth and manganese passivating agents specifically. It follows that we cannot sustain the examiner's section 112, first paragraph, rejection of claims 13 through 15, 21 through 27, 35 through 39, 41 through 45 and 50 through 55.

With regard to the section 103 rejection based upon Suggitt as a primary reference, it is the examiner's basic position that, while "the Suggitt process includes a metals removal step [,]

. . . it is well within the level of ordinary skill to omit a known step in a process if the function of that step is not desired" (answer, page 15). In further support of this position, the examiner urges that "the chlorination step [of Suggitt] is specific to vanadium removal [, and] [i]f the removal of vanadium is not desired or not required, then one

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of ordinary skill in the art would eliminate the chlorination step" (answer, page 15). The examiner's position is not well taken.

We share the appellants' view that it would not have been obvious to eliminate the above noted chlorination step from Suggitt's process. In the first place, this step removes, not just vanadium as the examiner believes but also, iron (e.g., see lines 60 through 62 in column 7). Secondly, and more significantly, the examiner has begged the issue by concluding that it would have been obvious to eliminate Suggitt's chlorination step if removal of the contaminating metal, namely, vanadium "is not desired or not required". That is, the examiner has advanced no evidence that the removal of vanadium (or for that matter iron) "is not desired or not required". On the contrary, the prior art represented by the Suggitt reference plainly evinces that the removal of contaminating metals particularly vanadium are both desired and required in order to avoid catalyst deactivation.

In summary, it is our determination that the process disclosed by Suggitt includes a chlorination step for removing

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contaminating metals from zeolite catalyst and that the reference evidence adduced by the examiner does not establish a *prima facie* case of obviousness with respect to the elimination of this step. In light of this circumstance and because we interpret claims 1 through 4, 6, 7, 9, 10, 13 through 15, 21 through 27, 50 through 52, 54 and 55 as excluding the aforementioned step, we cannot sustain the examiner's section 103 rejection of these claims as being unpatentable over Suggitt in view of Bertus, Readal and Japanese '406. Analogous reasoning leads to the determination that we also cannot sustain the examiner's corresponding rejection of claims 11 and 53 as being unpatentable over these references and further in view of Corneil. By way of clarifying this last mentioned point, the examiner does not urge (and we do not consider) that Corneil supplies the evidentiary deficiency previously mentioned with respect to Suggitt.

We reach a different conclusion regarding appealed claims 35 through 39 and 41 through 45. This is because we find nothing and the appellants point to nothing in these claims which excludes the above discussed



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chlorination/demetallization step of Suggitt. For this reason, and because we agree with the examiner that it would have been obvious to provide Suggitt's catalyst with a passivating metal such as antimony, it is appropriate to sustain the examiner's section 103 rejection of claims 35 through 39 and 41 through 45 as being unpatentable over Suggitt in view of Bertus, Readal and Japanese '406.

Concerning the section 103 rejection based upon Corneil as a primary reference, the examiner concludes, *inter alia*, that "[i]t . . . would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Corneil by substituting a zeolite catalyst for those disclosed by Corneil because zeolite catalysts are effective in cracking processes and are disclosed by Suggitt and Cimbalo to benefit from the sequential oxidation-reduction steps of Corneil" (answer, page 11). From our perspective, however, the here applied references would not have suggested this proposed modification based upon a reasonable expectation of success. In re O'Farrell, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1680-1681 (Fed. Cir. 1988).

Indeed, we agree with the appellants' view that the teachings of Cimbalo militate against rather than for the examiner's obviousness conclusion. This is because Cimbalo teaches that contaminating metals lose their effectiveness more slowly on zeolitic catalysts of the type taught by Suggitt than on amorphous silica-alumina catalysts of the type taught by Corneil (see the first full paragraph in the third column on page 122 of Cimbalo). This teaching would have suggested that Corneil's process for reducing contaminating metals on amorphous silica-alumina catalysts might not be effective for reducing contaminating metals on zeolitic catalysts of the type taught by Suggitt. Further, this suggestion of ineffectiveness would have been reinforced by Suggitt's teaching that contaminating metals on his zeolitic catalysts must be removed by a chlorination step even when previously subjected to a reducing atmosphere of the type used by Corneil (see lines 9 through 27 in column 3 of Suggitt which disclose a pre-chlorination treatment with hydrogen and/or carbon monoxide atmosphere and compare lines 9 through 46 in column 4 of Corneil which disclose treatment with a

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reducing atmosphere comprising hydrogen and/or carbon monoxide).

In light of the foregoing, we cannot sustain the examiner's section 103 rejection of all appealed claims as being unpatentable over Corneil in view of Suggitt, Cimbalo, Bertus, Readal and Japanese '406.

In summary, we have sustained only the provisional rejection of all appealed claims based on obviousness-type double patenting and the section 103 rejection of claims 35 through 39 and 41 through 45 as being unpatentable over Suggitt in view of Bertus, Readal and Japanese '406. All other rejections advanced by the examiner on this appeal have been reversed.

The decision of the examiner is affirmed.

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No time period for taking any subsequent action in  
connection with this appeal may be extended under 37 CFR  
§ 1.136(a).

AFFIRMED

	Bradley R. Garris	)	
	Administrative Patent Judge	)	
		)	
		)	
		)	
	Charles F. Warren	)	BOARD OF
PATENT		)	
	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES
		)	
		)	
	Thomas A. Waltz	)	
	Administrative Patent Judge	)	

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